(March 13, 1995)

Retaining Wall

Wall construction shall begin at the lowest portion of the excavation and each layer shall be placed horizontally, and shall be completed entirely before the next layer is started. Geotextile splices transverse to the wall face will be allowed, provided the minimum overlap is 2 feet or the splice is sewn together. Geotextile splices parallel to the wall face will not be allowed. The geotextile shall be stretched out in the direction perpendicular to the wall face to ensure that no slack or wrinkles exist in the geotextile prior to backfilling.

The fill material shall be placed on the geotextile in such a manner that a minimum of 6 inches of material shall be between the vehicle or equipment tires or tracks and the geotextile at all times. The backfill material shall contain no particles greater than 3 inches in size.

The damaged geotextile section shall be replaced by the Contractor with a new section of geotextile at no cost to the State.

A temporary form system shall be used to prevent sagging of the geotextile facing elements during construction. A typical example of a temporary form system and sequence of wall construction required when using this form are detailed in the Plans.

The wall backfill shall be placed and compacted in accordance with the wall construction sequence detailed in the Plans. The minimum compacted backfill lift thickness of the first lift above each geotextile layer shall be 6 inches. The maximum compacted lift thickness anywhere within the wall shall be 8 inches or one half of the geotextile layer spacing, whichever is least.

Each layer shall be compacted to 95 percent of maximum density. The water content of the wall backfill shall not deviate above the optimum water content by more than 3 percent. Sheepsfoot rollers, other rollers with protrusions, and full-size vibratory rollers will not be allowed. Small vibratory rollers will be allowed with the approval of the Engineer. Compaction within 3 feet of the wall face shall be achieved using light mechanical tampers approved by the Engineer and shall be done in a manner to cause no damage or distortion to the wall facing elements or reinforcing layers.

If corners are to be constructed in the geotextile wall the method used to construct the geotextile wall corners shall be submitted to the Engineer for approval at least 14 calendar days prior to beginning construction of the wall. The corner shall provide a positive connection between the sections of the wall on each side of the corner such that the wall backfill material cannot spill out through the corner at any time during the design life of the wall. Furthermore, the corner shall be constructed in such a manner that the wall can be constructed with the full geotextile embedment lengths in the vicinity of the corner in both directions.

The method of ending a geotextile wall layer at the top of the wall, where changes in wall top elevation occur, shall be submitted for approval with the wall corner details submittal. The end of each layer at the top of the wall shall be constructed in a manner which prevents wall backfill material from spilling out the face of the wall throughout the life of the wall. If the profile of the top of the wall changes at a rate of 1:1 or steeper, this change in top of wall profile shall be considered to be a corner. Also, wall angle points with an interior angle of less than 150 degrees shall be considered to be a corner.

The base of the excavation shall be completed to within ±3 inches of the staked elevations. The external wall dimensions shall be placed to within ±2 inches of that staked. Each layer and overlap distance shall be completed to within ±1 inch of that detailed in the Plans.

The maximum deviation of the wall face from the batter detailed in the Plans shall not be greater than 3 inches for permanent walls and 5 inches for temporary walls. The face batter measurement shall be made at the midpoint of each wall layer. Each wall layer depth shall be completed to within ±1 inch of that detailed in the Plans.

Non-corroding alignment wires and thickness control pins shall be provided to establish thickness and plane surface. Alignment wires shall be installed at corners and offsets not established by formwork. The Contractor shall ensure that the alignment wires are tight, true to line, and placed to allow further tightening. Alignment wires shall be removed after wall construction is complete.